

GUARD RAILING END CONNECTION TO WALL OR ABUTMENT FACE

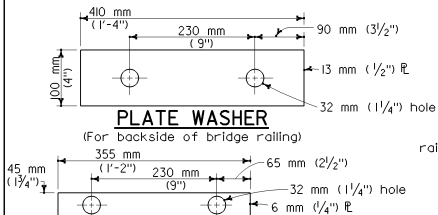
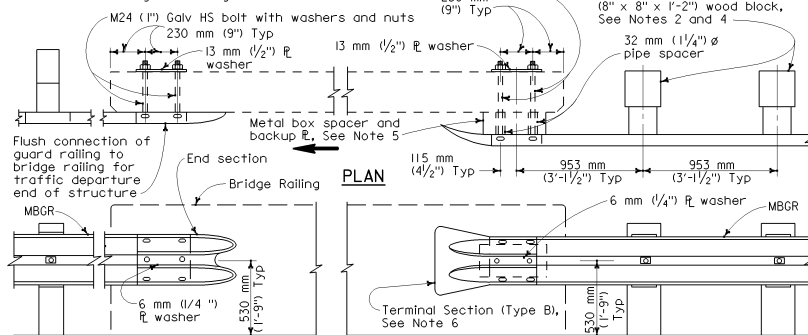


PLATE WASHER

(For face of guard railing)



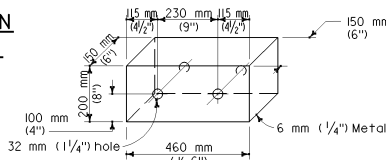
CONNECTION DETAIL B GUARD RAILING CONNECTION TO BRIDGE RAILING

See Note 7

ELEVATION

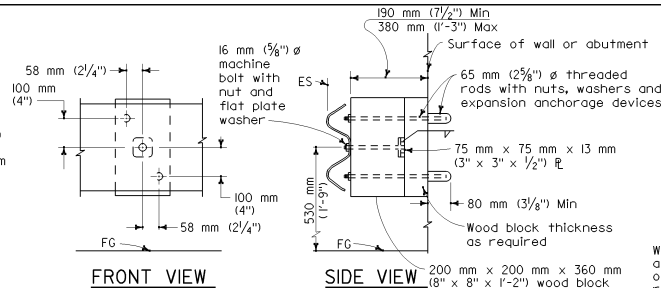
STRAIGHT METAL BOX SPACER

Use where approach guard railing is parallel to bridge railing, wall or abutment face at the point of connection. See Note 5

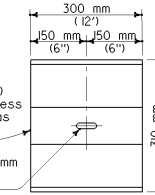


GUARD RAILING ANCHORAGE TO WALL OR ABUTMENT FACE

(Use this type of anchorage where guard railing is required across face of wall or abutment) See Notes 8 and 9



ELEVATION

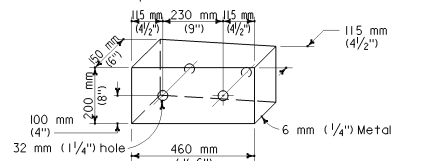


BACK-UP PLATE

For use between guard rail element and metal box spacer.

APPROACH RAILING TRANSITION

Wood post and blocks



TAPERED METAL BOX SPACER

Use where approach guard railing is not parallel to bridge railing, wall or abutment face at the point of connection. See Note 5

NOTES

- These connection details apply to bridge railings, abutments and retaining walls. For additional connection details for bridge railing, see Standard Plans BII-53, BII-54, BII-55 and BII-56 and the project plans. See Standard Plan A77K for connection details to bridges with sidewalks or curbs.
- Additional details of post, blocks and hardware are shown on Standard Plans A77B, A77C and A77CA.
- Direction of traffic indicated by →.
- For traffic approach railing details, see Standard Plans A77D, A77E and the "Approach Railing Transition Details" on this sheet.
- When metal box spacer is installed, place M24 (1") bolts through 32 mm ϕ x 125 mm (1 1/4" ϕ x 5") and 32 mm ϕ x 100 mm (1 1/4" ϕ x 4") pipe spacers within tapered box spacer and place M24 (1") bolts through 32 mm ϕ x 130 mm (1 1/4" ϕ x 5 1/4") pipe spacers within straight box spacer.
- Terminal sections not to be installed on trailing end of approach guard railing constructed adjacent to one-way roadways. When terminal section is not installed, use backup plate between rail element and metal box spacer. See Standard Plan A77B for backup plate details.
- In addition to the use of "Connection Detail B" for traffic departure ends of structure, "Connection Detail B" shall be used on the traffic approach ends of structure on two-way roadways which are 18 m (60') or less in width. Where "Connection Detail B" is used at the traffic approach ends of structures, the size and spacing of posts and blocks shall be as shown in the "Approach Railing Transition" detail on this sheet.
- Use timber shims without posts where clearance between rail element and wall or abutment is less than 380 mm (15").
- Do not attach railing to bridge columns. Use separate posts as shown on Standard Plan A77E.
- Use a flat plate washer on the rail face when attaching rail element to these post. Wood post with wood block are only to be used for these posts and blocks.

METAL BEAM GUARD RAILING CONNECTIONS TO BRIDGE RAILINGS, RETAINING WALLS AND ABUTMENTS

These "Standard Plans for Construction of Local Streets and Roads" contain units in two systems of measurement: International System of Units (SI or "metric") and United States Standard Measures shown in the parentheses (). The measurements expressed in the two systems are not necessarily equal or interchangeable. See the "Foreword" at the beginning of this publication.

NO SCALE

A77J

DIST.	COUNTY	ROUTE	POST MILES	SHEET TOTAL
			TOTAL PROJECT	NO. SHEETS

July 1, 2002
 PLANS APPROVAL DATE
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REGISTERED CIVIL ENGINEER
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 Exp. 6-30-05
 STATE OF CALIFORNIA